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ASTRONOMICAL INSTRUMENTS IN COURSE OF CONSTRUCTION IN THE UNITED STATES.

NOTE.—The Committee on Publication will be glad to receive from instrument-makers and opticians in the United States, from time to time, brief notices of important instruments and pieces of apparatus which are in course of construction. The notices should be short, and especial stress should be laid upon novelties of design or of execution. The Committee reserves the right to recommend for printing only those portions of lists furnished which seem to have particular interest to the members of the Society. Mr. BRASHEAR, under date of August 30th, kindly furnishes the following list.

E. S. H., J. E. K., C. G. Y.

Instruments and Apparatus Just Completed, and now in Course of Construction, at the Astronomical and Physical Instrument Works of J. A. BRASHEAR, Allegheny, Pennsylvania.

One Star Spectroscope, for Lick Observatory.

One Equatorial Mounting, with Controlled Clock. All motions brought to eye-end, etc. For the Willard Photographic Telescope of Lick Observatory. Ordered by Hon. C. F. CROCKER.

One Spectroscope, for stellar and solar work, for Carleton College Observatory. This instrument is very complete, being provided with Jena glass objectives and prism, a fine grating, and reversion apparatus for rotating the sun's image, electric illumination and comparison attachments, micrometer of the LINDSAY-GILL form, cylindrical lenses, etc.

A duplicate of the above, in anticipation of the wants of two astronomers.

One Smaller Spectroscope, for Vassar College Observatory.

Two duplicates of the above, for stock.

One Large Spectroscope and Spectrograph, for Prof. C. A. YOUNG, Halstead Observatory, Princeton, New Jersey. This instrument is to be of the highest grade, and will probably be the finest in the United States. It is to have visual and photographic objectives, gratings and a battery of large THOLLON prisms, with every accessory to do the best solar, planetary and stellar work.

One sixteen-inch Object Glass, for Carleton College Observatory.

One twelve-inch Object Glass, for Brown University Observatory.

One twelve-inch Object Glass, for Mr. G. E. HALE's Observatory, Chicago.

One six-inch Object Glass, for Mr. HENRY BERGER's Observatory, Allegheny.

One six-inch Object Glass, for Mr. CHARLES REMINGTON, Camden Astronomical Society.

One twelve-inch Reflecting Telescope, for Mr. SAMUEL MARSDEN, St. Louis.

One six-and-a-half-inch Reflecting Telescope, for Mr. F. L. SMITH, Oshkosh, Wisconsin.

One six-and-a-half-inch Reflecting Telescope, for Mr. W. CULLEN, JR., Merrimac, Wisconsin.

Four Special Plane Mirrors of speculum metal and steel, for the Observatory of Paris, Prof. DESLANDRES.

Special Photometer, for Prof. S. P. LANGLEY, Smithsonian Institution.

Special Quartz and Rock-Salt Lenses, for Smithsonian Institution.

Two Large Quartz Lenses, for Prof. A. W. WRIGHT, Sloan Physical Laboratory, Yale University.

And many minor pieces.

OBSERVATIONS OF THE TRANSIT OF *JUPITER'S*
SATELLITE IV. (OCTOBER 2, 1890.)

BY C. B. HILL.

The following observations were made with the eight-and-a-half-inch equatorial of Chabot Observatory, Oakland, using powers of from 90 to 400 diameters.

Sky clear, atmosphere at beginning only fair—say 3.

Commenced observation at 6^h 06^m P. s. t. (at which time by American Ephemeris, IV should be hanging on edge of planet, about at external contact), but could see no trace of satellite. Suspected “duskiness” at following edge, just north of belts.

6^h 10^m. “*Duskiness*” seen to be circular and within limb; evidently internal contact of Satellite IV.

6^h 18^m. Satellite still faint, “dusky,” one diameter within, apparently commencing to darken.

6^h 20^m. Much blacker. Cannot say but what this change is owing *partially* to improved atmospheric conditions.

6^h 22^m. Satellite perfectly round, and jet black.

6^h 27^m. Satellite two diameters from limb.

6^h 32^m. Satellite three diameters from limb.

6^h 39^m. Satellite perfectly black. Atmosphere, good (nearly 4). Satellite tangent to north edge of north reddish belt, at times seems perfectly round, at other times imagine it to be flattened on side nearest limb. At this point Mr. BURCKHALTER comes up, immediately pronounces image of satellite “cut off” at point I have mentioned, and also on apparent upper outline. Atmosphere quite good at times, but I cannot see any flattening except at the north following limb.
